ACC.14
TCT@ACC-i2 | innovation in intervention

A1219
JACC April 1, 2014
Volume 63, Issue 12

Non Invasive Imaging

INAPPROPRIATE USE OF MYOCARDIAL PERFUSION IMAGING IN WOMEN: HAS THE GENDER BIAS PENDULUM SWUNG TOO FAR?

Poster Contributions
Hall C
Monday, March 31, 2014, 9:45 a.m.-10:30 a.m.

Session Title: SPECT Myocardial Perfusion Imaging: Trends in Imaging, Appropriateness, Radiation Updates
Abstract Category: 16. Non Invasive Imaging: Nuclear
Presentation Number: 1247-21

Authors: *Kathleen Hayes-Brown, Nathan Frogge, Rami Doukky, Rush University Medical Center, Chicago, IL, USA, John Stroger Cook County Hospital, Elgin, IL, USA*

Background: Patient gender bias in physician practices is known to adversely affect women in both recognition of and diagnostic testing for cardiovascular disease. However, the impact of patient gender on physician adherence to appropriate use criteria (AUC) for SPECT myocardial perfusion imaging (MPI) in contemporary, community-based practice is not well described.

Methods: In a cohort of consecutive patients who underwent office-based MPI in 11 community practices in the Chicago metropolitan area, we determined adherence to the 2009 AUC. We then compared inappropriate use rates among men and women using univariate and multivariate analysis, adjusting for clinical covariates known to impact AUC determination.

Results: The study included 1511 patients [657 (43%) women; 164 (89%) with known CAD; mean age 57 ± 13]. In the entire cohort, MPI referrals were appropriate in 779 (51.5%), inappropriate in 688 (45.5%), and uncertain in 44 (3%) cases. Women had lower mean Framingham 10-year CHD risk, lower likelihood of obstructive CAD, lower prevalence of known CAD and abnormal MPI ($P < 0.001$). Among women, 399 (61%) studies were inappropriate vs. 289 (34%) among men [OR = 3.0 (95% CI = 2.4 - 3.7), $P < 0.001$]. According to the 2009 AUC, among women who received inappropriate MPI, exercise treadmill test (without imaging) would have been adequate in 243 (61%) cases and no testing was indicated in the remaining 156 (39%) inappropriate referrals. Multivariate logistic regression demonstrated that female gender is a strong independent predictor of inappropriate use [OR = 39.9 (95% CI = 23.8 - 67.1); $P < 0.001$] after adjusting for age, CAD risk factors (hypertension, diabetes, family history, smoking, dyslipidemia), known CAD status, ECG interpretability, symptomatic presentation, ability to exercise, and physician specialty (cardiology vs. other).

Conclusion: In this community cohort, women were commonly subject to inappropriate MPI testing, despite the relatively low risk of this population. This is especially important, since women are at higher radiation-related cancer risk than men. This study brings to question whether gender bias has “over-corrected”, manifesting in MPI over-testing in women.